EI Ref #4

EPA REGION IV RCRA RECORDS TRANSMITTAL FORM

Please DO NOT submit Un-dated material. DO NOT submit Government Financial / Funding Information, including Contract Costs. Please DO NOT submit Duplicate Copies. Please DO submit records to the RCRA Records Center located at the North end of the 10th floor.

TRANSMITTAL DATE: 3/8/06 YOUR NAME: Don Webster

FACILITY NAME: Grenada Manufacturing LLC FACILITY ID#: MSD007037278

DOCUMENT DATE: _____

DOCUMENT TITLE: Review of Draft Indoor Air Monitoring Report

DOCUMENT DESCRIPTION (Use RCRA Document Description Table): _____

ACTION AREA: _____ CONFIDENTIAL: YES _____ NO ✓

SPECIAL INSTRUCTIONS: file ≈ Indoor Air Monitoring Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

QUICK REFERENCE FOR STATUS OF ENVIRONMENTAL INDICATORS					
Facility Name and EPA I.D.#	**Location**	**CA725 Decision**	**CA750 Decision**	**CA400 Decision**	**CA550 Decision**
Grenada Manufacturing, LLC MSD007037278	**Grenada Mississippi**	**YES**	**YES**	**Entire Facility**	**NA**

MEMORANDUM

APR 05 2006

SUBJECT: Environmental Indicator Determination for Grenada Manufacturing, LLC
EPA I.D. Number: MSD007037278

FROM: Donald L. Webster, Environmental Scientist
South Programs Section
RCRA Programs Branch

THROUGH: Lael Butler, Chief
South Programs Section
RCRA Programs Branch

Jon D. Johnston, Chief
RCRA Programs Branch
Waste Management Division

TO: EPA Administrative File

I. PURPOSE OF MEMO

The purpose of this memo is to document Grenada Manufacturing's status in relation to the following corrective action event codes recently redefined in RCRA Info data management system. Grenada Manufacturing has successfully achieved the following for the entire facility.

1) Human Exposures Under Control (CA725)
2) Ground Water Releases Controlled (CA750)
3) Remedy Decision Determination (CA400)

The following is a brief summary to support the code entries.

Grenada Manufacturing will have a CA725 YES and a CA750 YES entered into RCRA INFO when this document is signed.

Grenada Manufacturing will have an 'Entire Facility' CA400 coded into RCRA Info for the date that the HSWA Permit was modified for the remedy, December 23, 2005.

The applicability of these event codes adheres to the revised definitions initiated by the Office of Solid Waste (OSW). These revisions will be included in RCRA Info Version 3 in March 2006.

Concurrence by the RCRA Branch Chief is required prior to entering the CA725 and the CA750 into RCRA Info. Your concurrence with the interpretations provided in the following paragraphs and the subsequent recommendations is satisfied by dating and signing above.

II. HUMAN EXPOSURES UNDER CONTROL DETERMINATION CA 725
(attached)

III. GROUNDWATER RELEASES CONTROLLED DETERMINATION CA750
(attached)

IV. REMEDY DECISION DETERMINATION CA400 'Entire Facility'

A decision has been made and coded into RCRA Info that the Remedy for the Entire Facility is in place.

Interim Measures (IMs) for the Grenada Manufacturing Facility were required by EPA Region IV in 2000 under the HSWA permit issued in 1998. In 2003, EPA requested that a final Corrective Measures Study (CMS) be prepared that would encompass the corrective measures for the entire site. The facility responded with an IMS Study Report and later, a CMS report wherein the potential alternatives and the proposed corrective measures for the entire site were presented. This document is entitled: Corrective Measures Study, Grenada Manufacturing LLC, EPA ID Number MSD 007037278, Grenada Mississippi, August 2003

The facility also has a RCRA permit for regulated units (RUs) from the Mississippi Department of Environmental Quality (MDEQ). Earlier investigative and remedial work was conducted under an Administrative Order on Consent issued by MDEQ, and the RCRA permit. The HSWA permit builds on these earlier actions to put in place final corrective measures for the entire site.

A number of significant source control measures have been previously implemented at the site. These source control measures include the following:

Free-product recovery at AOCs A and B
Free-product recovery at MW-2 located adjacent to the Sludge Lagoon (SWMU 4)
Closure of the former Equalization Lagoon (SWMU 2)
Removal action at the On-Site Landfill (SWMU 3)
Ex-Situ Soil Vapor Extraction and Stabilization of the On-Site Landfill (SWMU 3)
Clean Closure of the Chrome Destruct Pit (SWMU 14)
Shutdown and Closure of the Chrome Plating Lines (SWMU 27)

The Facility's Corrective Measures Study Report, submitted as part of the facility's HSWA permit, contains a full Description of the Final Corrective Measures selected as the Final Remedy for the Entire Site, and the corrective measures accomplished to date under the RCRA and HSWA permits.

Based on the alternatives evaluated in the CMS, EPA accepted the following corrective measures to be performed at the site:

1. Additional Non-Aqueous Phase Liquid Recovery at AOCs A and B and the sludge lagoon.
2. Construction of a high vacuum multi-phase extraction system at AOCs A and B.
3. Installation of a Sheet Pile Barrier up gradient of AOCs A and B.
4. Closure of the Sludge Lagoon using stabilization of the sludge and capping or covering of the remaining impacted soil.
5. Installation of a Permeable Reactive Barrier down gradient of the VOC plume.
6. Implementation of selected Institutional Controls for the site.

To date, only the Permeable Reactive Barrier has been constructed, none of the other remedy components have been implemented, hence, a CA550 determination for the 'entire facility' is not part of the current Environmental Indicator Determination.

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRA Info code (CA725)

Current Human Exposures Under Control

Facility Name:	**Grenada Manufacturing , LLC**
Facility Address:	**635 Highway 332 Grenada MS 38901**
Facility EPA ID #:	**MSD007037278**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   __X__ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ if data are not available skip to #6 and enter"IN" (more information needed) status code.

BACKGROUND Figure 1-1 shows the location of Grenada Manufacturing, LLC.

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EIs are near-term objectives which are currently being used as Program measures for the

Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI is for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRA Info national database ONLY as long as they remain true (i.e., RCRA Info status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Key Contaminants
Groundwater	_x_	___	___	TCE, cis 1,2 DCE, 1,1 DCE, VC, Toluene, Chromium
Air (indoors)[2]	_x_	___	___	TCE
Surface Soil (e.g., <2 ft)	___	_x_	___	
Surface Water	___	_x_	___	
Sediment	___	_x_	___	
Subsurf. Soil (e.g., >2 ft)	_x_	___	___	TCE, Toluene, Chromium
Air (outdoors)	___	_x_	___	TCE

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Rationale and Reference(s): From the RCRA Facility Investigation, groundwater is known to be contaminated with trichloroethene [TCE]; cis 1,2 dichlorethene [DCE]; 1,1 DCE, vinyl chloride [VC]; toluene, and chromium. Indoor Air is known to be contaminated with TCE. Subsurface Soils are known to be contaminated with TCE, toluene, and chromium.

Reference #1. RCRA Facility Investigation Report, prepared for Grenada Manufacturing Facility. Grenada Mississippi. January 2001.

Reference #2. Indoor Air Monitoring Report, Grenada Manufacturing Site. Grenada, Mississippi, prepared for ArvinMeritor, Troy, Michigan. December 2004.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Media	Potential **Human Receptors** (Under Current Conditions)						
"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	No	No	No	No	No	No	No
Air (indoors)	No	Yes	No	Yes	No	No	No
Soil (surface, e.g., <2 ft)	No	No	No	No	No	No	No
Surface Water	No	No	No	No	No	No	No
Sediment	No	No	No	No	No	No	No
Soil (subsurface e.g., >2 ft)	No	No	No	Yes	No	No	No
Air (outdoors)	No	No	No	No	No	No	No

Footnote:

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

__X__ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s): Construction Workers may come into contact with contaminated air and/or subsurface soil during construction of remedial measures or renovation of the plant. Institutional controls, protective clothing and equipment, plus use of a facility-wide Health & Safety Plan are expected to prevent exposure from this pathway. Plant workers may come in contact with contaminated indoor air, resulting from the presence of a TCE plume under the occupied Main Plant Building. See the Indoor Air Monitoring Report dated December 2004.

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_X__ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s): Grenada is known to have a shallow, commingled groundwater plume of toluene, TCE, and TCE breakdown products originating on the east side of the Main Plant Building and flowing roughly south westerly under the Main Plant Building in the vicinity of the former Chromium Destruct Pit and the Chrome Plating Line Area (Figure 1-2). There is a documented potential for exposure of main plant workers and site construction workers to TCE. Two indoor air samplings were conducted; one in February 2003 and one in August 2004. The Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils was used at the site to evaluate exposures to TCE, DCE, Toluene, Vinyl Chloride and seven other potential indoor air contaminants.

Reference #3. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils. November, 2002 EPA530-D-02-004.

5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_X__ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s): Findings from the Indoor Air Monitoring Report of December 2004 indicate that the highest levels of TCE and methylene chloride detected were approximately a 2E X 10-5 risk level. EPA concluded that the methylene chloride found during the sampling events was likely from other in-plant processes or housekeeping or it was a laboratory artifact. The report concluded that the TCE found in indoor air was attributable to the groundwater plume. No other indoor air contaminants were measured in quantities that exceeded indoor air screening concentrations for carcinogens or non-carcinogens. Since TCE levels in indoor air did not exceed an Industrial Risk Level of E X10-4, the report concluded that there was not a significant human health risk from indoor air contaminants at the Grenada Manufacturing Plant.

Reference #4. Review of the Draft Indoor Air Monitoring Report for the Grenada Manufacturing Site, Janine Dinan, Environmental Health Scientist, Office of Technical Services, Waste Management Division USEPA Region 4. June 16, 2003.

6. Check the appropriate RCRA Info status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

_X__ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Grenada Manufacturing, LLC facility, EPA ID # MSD007037278 located at 635 Highway 332 Grenada, Mississippi under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by (signature) Donald L. Webster Date 3/30/2006
(print) Donald L. Webster
(title) Environmental Scientist

Supervisor (signature) Paul H. Butler Date 4/05/2006
(print) for Jon D. Johnston
(title) Chief, RCRA Programs Branch
(EPA Region or State) USEPA R-4

Locations where References may be found:
File Room 10th Floor
Sam Nunn Federal Center
61 Forsyth St. SW
Atlanta GA 30303

Contact telephone and e-mail numbers:
(name) Donald L. Webster
(phone #) 404 562-8469
(e-mail) Webster.Donald@epa.gov

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRA Info code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name:	**Grenada Manufacturing , LLC**
Facility Address:	**635 Highway 332 Grenada MS 38901**
Facility EPA ID #:	**MSD007037278**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   __X__ If yes - check here and continue with #2 below.

   _____ If no - re-evaluate existing data, or

   _____ if data are not available, skip to #8 and enter"IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program, the EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, (GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRA Info national database ONLY as long as they remain true (i.e., RCRA Info status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

__X__ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

_____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

_____ If unknown - skip to #8 and enter "IN" status code.

Footnotes:

[1]"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Rationale and Reference(s): The Remedial Investigation Report, January 1994 and the RCRA Facility Investigation Report, January 2001 indicate that various contaminants have been detected in groundwater at the site with trichloroethene, and its daughter products, (i.e., cis-1,2-dichloroethene, 1,1-dichloroethene, and vinyl chloride) arsenic, lead, and chromium being the constituents of greatest potential concern. The extent of the TCE plume and its daughter products, as of October 2000, was delineated in the RFI Report. These plumes are located underneath the Main Plant Building and extend down gradient and ultimately discharge to Riverdale Creek. The groundwater quality data show that impacts from various SWMUs and AOCs at the site are commingled and become diffused in very close proximity to any given source. In general, the other constituents of concern, such as toluene, 1,1,2-trichloroethane (TCA), and 1,2-dichloroethane (DCA), appear in the vicinity of the Main Plant area. The plumes for the inorganics appear to be limited to the area from the Main Plant to the On site Landfill; however, they do not appear to extend to Riverdale Creek. Additionally, sporadic detections of bis(2-ethyl-hexyl) phthalate have been observed at isolated locations. Based on these historic data, the primary constituents of concern (particularly in the vicinity of Riverdale Creek) are TCE and its degradation products.

Reference #5. Remedial Investigation Report, Randall Textron Plant Site, Grenada, Mississippi; Baseline Risk Assessment, January 1994.

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

_X___ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s): A number of significant source control measures have been previously implemented at the site. These source control measures include the following measures taken under the facility's RCRA Permit:

- Free-product recovery at AOCs A and B
- Free-product recovery at MW-2 located adjacent to the Sludge Lagoon (SWMU 4)
- Closure of the former Equalization Lagoon (SWMU 2)
- Removal action at the On site Landfill (SWMU 3)
- Ex-Situ Soil Vapor Extraction and Stabilization of the on site Landfill (SWMU 3)

Footnotes:

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

The corrective measures proposed for groundwater remediation under the HSWA Permit at the site include additional source control measures, and the installation of a permeable reactive barrier (PRB) up gradient of Riverdale Creek. The Corrective Measures Study Report and the Design Basis Report detail the implementation of the various corrective measures at the site. Construction of the PRB, a major component of the remedy, was completed in March 2005. The PRB provides substantial mass and volume reduction of constituents of concern and control of off site migration of contaminants. Constituents in the dissolved phase are chemically reduced to less harmful compounds as groundwater passes through the PRB. Technical details of the PRB can be found in the final Design Basis Report, September 2004. In addition, clean closure of the Chrome Destruct Pit (SWMU 14) and shutdown and closure of the Chrome Plating Lines (SWMU 27) has halted further Chromium contamination.

Reference #6. Corrective Measures Study Report, Grenada Manufacturing LLC, EPA ID Number MSD 007037278, Grenada Mississippi, August 2003.

Reference #7. Design Basis Report: Permeable Reactive Barrier Groundwater Interim Measure, Grenada Manufacturing Site, EPA ID Number MSD 007037278, Grenada Mississippi, May 2001, Revised April 2003, finalized September 2004.

Reference #8. Chromium Destruct Pit Clean Closure and Status of Plating Line Closure Report, Grenada Manufacturing Facility. Grenada, Mississippi March 27, 2002.

Reference #9. Revised Closure Report, Chrome Plating Line Area, Grenada Manufacturing, LLC Facility, EPA ID Number MSD 007037278, Grenada Mississippi, January 2004.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_X___ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s): Contaminated groundwater discharges into Riverdale Creek. See discussion and references in Number 3. above.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

__X__ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown - enter "IN" status code in #8.

Footnotes:

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

Rationale and Reference(s): Actual surface water concentrations of nine volatile organic constituents of concern and three metal constituents of concern have been compared to Mississippi and EPA acute and chronic aquatic life criteria, and Mississippi and EPA human health criteria. The concentrations have been found not to exceed these criteria, except for one incident for lead in surface water at one station during one sampling event during the past two years.

Reference #10. Annual Monitoring Report for Calendar Year 2004. Grenada Manufacturing LLC, Grenada, Mississippi prepared for ArvinMeritor. Troy, Michigan, August 2005.

Reference #11. Annual Monitoring Data for Calendar Year 2005. Grenada Manufacturing LLC, Grenada, Mississippi prepared for ArvinMeritor. Troy, Michigan.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s): Not Applicable.

Footnotes:

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

__X__ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s): At Grenada Manufacturing LLC, there is ongoing groundwater monitoring in connection with the Equalization Lagoon (a regulated unit), which provides a check on Chromium, Toluene and TCE levels near the Main Plant. This semi-annual groundwater sampling and analysis is conducted in accordance with the facility's MDEQ RCRA permit.

Under the facility's HSWA Permit, a facility-wide 'baseline' groundwater sampling event was conducted in November 2003 in accordance with the Performance Monitoring Plan in the Design Basis Report for the PRB. The Performance Monitoring Plan includes fourteen (14) new monitoring wells installed up and down gradient of the PRB to supplement the existing monitoring well network. The purpose of the additional monitoring wells is to provide supplemental groundwater quality and groundwater elevation monitoring in areas up gradient of, within, and down gradient of the PRB, which was installed for facility-wide groundwater migration control. Monitoring wells that are part of the performance monitoring for the PRB were sampled and analyzed within one month of completion of the PRB installation and semi-annually afterwards. All monitoring wells will be sampled biennially (once every two years). The facility-wide sampling events will supplement the existing groundwater quality database for the facility and also serve to monitor on-going interim and final corrective measures at the facility.

Reference #12. Hazardous and Solid Waste Amendments [HSWA] Permit, Issued July 31, 1998, Modified December 23, 2005. Grenada Manufacturing, LLC. EPA ID Number MSD007037278.

Reference #13. Baseline Groundwater, Surface Water, and Sediment Sampling Report. Grenada Manufacturing LLC. Grenada, Mississippi. Prepared for ArvinMeritor, Troy, Michigan, June, 2004.

8. Check the appropriate RCRA Info status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

_X__ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Grenada Manufacturing, LLC facility, EPA ID # MSD007037278 located at 635 Highway 332 Grenada, Mississippi Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

_____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

_____ IN - More information is needed to make a determination.

Completed by (signature) _____ Date 3/30/2006
(print) Donald L. Webster
(title) Environmental Scientist

Supervisor (signature) _____ Date 4/05/2006
(print) Jon D. Johnston
(title) Chief, RCRA Programs Branch
(EPA Region or State) Region 4

Locations where References may be found:

File Room 1Oth Floor
Sam Nunn Federal Center
61 Forsyth St. SW
Atlanta GA 30303

Contact telephone and e-mail numbers

(name) Donald L. Webster
(phone #) 404 562-8469
(e-mail) Webster.Donald@epa.gov

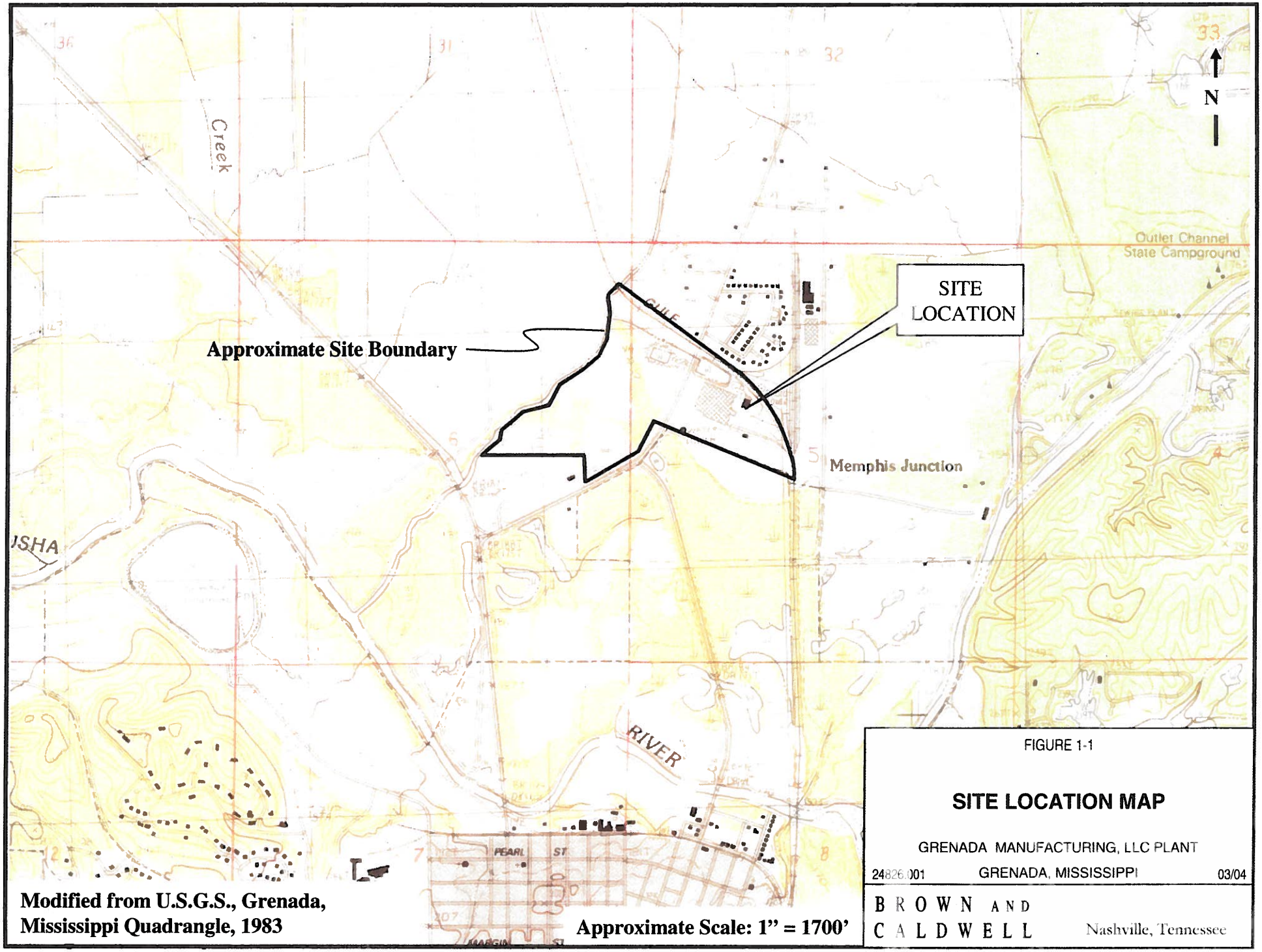


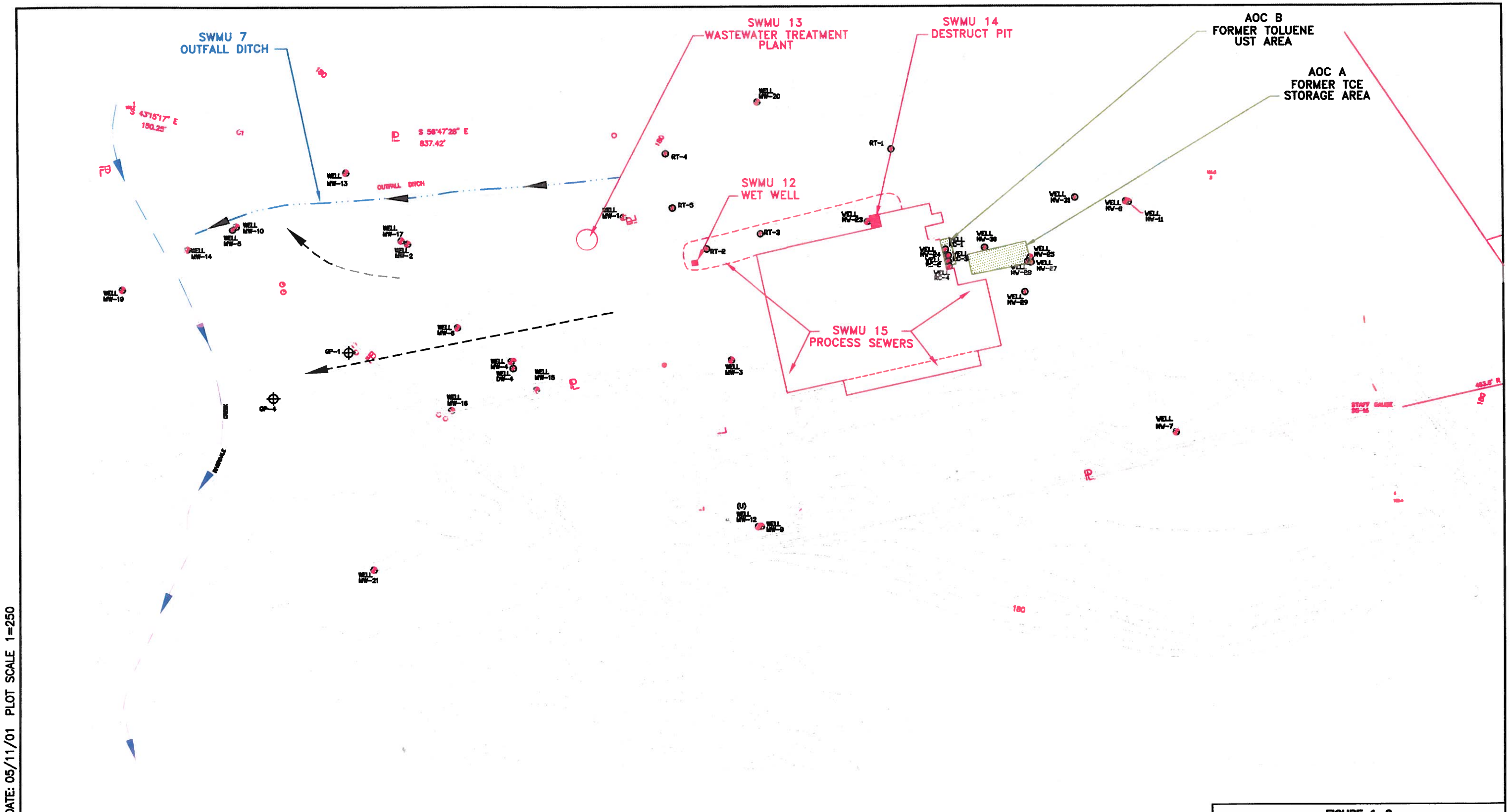
FIGURE 1-1

SITE LOCATION MAP

GRENADA MANUFACTURING, LLC PLANT

24826.001 GRENADA, MISSISSIPPI 03/04

BROWN AND CALDWELL Nashville, Tennessee



LEGEND

- Monitoring Well
- Geoprobe Piezometer
- Groundwater Flow Direction
- Surface Water Flow Direction

PRIORITY SWMUs

12–WET WELL
13–WASTEWATER TREATMENT PLANT
14–CHROME DESTRUCT PIT
15–PROCESS SEWERS

PRIORITY AOCs

A–FORMER TRICHLOROETHYLENE STORAGE AREA
B–FORMER TOLUENE UNDERGROUND STORAGE AREA

SCALE 250 0 250 500 FEET

SOURCE: MAP PREPARED BY ALMON ASSOCIATES, 1993. WELL LOCATIONS SHOWN ARE APPROXIMATE.

FIGURE 1–2
SITE MAP SHOWING LOCATIONS OF PRIORITY SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN
GRENADA MANUFACTURING, LLC PLANT
GRENADA, MISSISSIPPI
19071.001 05/01

BROWN AND CALDWELL Nashville, Tennessee

DRAWING NO.: 19071-011 DATE: 05/11/01 PLOT SCALE 1=250